

1. A heat tolerant broccoli plant.
2. Seed produced from the plant of claim 1.
3. Progeny seed produced from crossing the broccoli plant of claim 1 with another plant.
4. Broccoli plants produced from the seed of claim 3.
5. A broccoli seed capable of germinating into a plant which produces a commercially acceptable broccoli head under heat stress growth conditions.
6. The broccoli seed of claim 5 wherein said heat stress growth conditions are such that a broccoli variety selected from the group consisting of Marathon, Pinnacle, Premium Crop, Patriot, Laguna, Montecristo, Greenbelt, Sultan, Tierra, Laguna, Fiesta, Liberty and Landmark does not produce a commercially acceptable head.
7. The broccoli seed of claim 5 wherein said heat stress growth conditions include exposure of said plant to a maximum temperature of at least 90°F for at least 5 consecutive days during the growth cycle of said plant.
8. The broccoli seed of claim 5 wherein said heat stress growth conditions include exposure of said plant to a maximum temperature of at least 95°F for at least one day during the growth cycle of said plant.

5 9. The broccoli seed of claim 5 wherein said heat stress growth conditions include exposure of said plant to a maximum temperature of 85°F for at least 15 days during the growth cycle of said plant.

10. A broccoli plant or its parts produced by the seed of claim 5.

10 11. Broccoli plants regenerated from tissue culture of the broccoli plant of claim 10.

12. A seed from said plant of claim 10 or its progeny.

15 13. A broccoli seed designated 393-2-19 and having ATCC Accession Number 203533

14. A broccoli plant or its parts produced by the seed of claim 13.

20 15. Broccoli plants regenerated from tissue culture of the broccoli plant of claim 14.

25 16. Progeny seed produced from crossing the plant of claim 14 with another plant.

30 17. Tissue culture according to claim 15 comprising regenerable cells selected from the group consisting of meristematic tissue, anthers, leaves, ovules, roots, embryos, protoplasts and pollen.

18. A broccoli plant regenerated from regenerable cells of a tissue culture according to claim 17.

19. A broccoli plant having all the phenotypic characteristics of a plant produced from the seed of claim 13.

20. A seed from said plant of claim 19 or its progeny.

21. A broccoli plant produced from the progeny seed of claim 16.

22. A broccoli seed produced from the broccoli plant of claim 20.

23. A broccoli seed designated M7028 and having ATCC Accession No. 203530.

24. A broccoli plant or its parts produced by the seed of claim 23.

25. Broccoli plants regenerated from tissue culture of the broccoli plant of claim 24.

26. Tissue culture according to claim 24 comprising regenerable cells selected from the group consisting of meristematic tissue, anthers, leaves, ovules, roots, embryos, protoplasts and pollen.

27. A broccoli plant regenerated from regenerable cells of a tissue culture according to claim 26.

28. A broccoli plant having all the phenotypic characteristics of a plant produced from the seed of claim 23.

29. A seed from said plant of claim 24 or its progeny.

30. Progeny seed produced from crossing the plant of claim 24 with another broccoli plant.

31. A broccoli plant produced from the progeny seed of claim 30.

32. A broccoli seed produced from the broccoli plant of claim 31.

33. A broccoli seed designated M7007 and having ATCC Accession No. 203531.

34. A broccoli plant or its parts produced by the seed of claim 33.

35. Broccoli plants regenerated from tissue culture of the broccoli plant of claim 34.

36. Tissue culture according to claim 35 comprising regenerable cells selected from the group consisting of meristematic tissue, anthers, leaves, ovules, roots, embryos, protoplasts and pollen.

37. A broccoli plant having all the phenotypic characteristics of a plant produced from the seed of claim 33.

5

10

15

20

25

30

47. Progeny seed produced from crossing the plant of claim 42 with another plant.

48. A broccoli plant produced from the progeny seed of claim 47.

5 49. A broccoli seed selected from the group consisting of those broccoli seeds designated H7008, H7022, 393-2-47, 98-2192, 98-2088, 98-2061, H7007 and H70028.

10 50. A broccoli plant or its parts produced by the seed of claim 49.

51. A seed from said plant of claim 50 or its progeny.

15 52. A seed produced from crossing the plant of claim 50 with another broccoli plant.

20 53. A broccoli seed selected from the group consisting of those broccoli seeds designated: M7028, M7007, M7009, M7022, 393-2-19, H7008, H7022, 393-2-47, 98-2192, 98-2088, 98-2061, H7007, H7028, H7010, and H7021R, 4243, 4221, 4441, 4274-1, 4274-2, 4278-1, 4284-1, 4285-1, 4354-1, 4354-2, 4377-1, 4318-1, 4320-1, 4320-2, 4321-1, 4437-1, 4476-1, 4462-1, 4308-2, 4309-1, 4355-1, 4412-1, 4301, 4303, 4304, 4317, 4468, 4470, 4471, 4263-1, 4430-1, 4450-1, 4450-2, 4432-1, 4267-1, 7861, 7864, 7865, 7881, 7887, 7935, 8092, 7883, 7914, 7770, 7778, 25 4201, 4219, 4237, 4280, 4287, 4288, 4289, 4290, 4291, 4458-1, 4460-1, 4415, 4418, 4395-2.

Add a2